REMARKS

Upon entry of the present amendment, claims 1-12 are pending in the application, of which claims 1, 3 and 4 are independent. Applicant gratefully acknowledges the Examiner's indication at the first paragraph on page 6 of the Office Action that claims 2, 5 and 6 contain allowable subject matter and would be allowed if rewritten in independent form.

The claims have been amended to change the term "means" to --- device --- or --- devices ---, while similarly paragraphs of the specification are amended by changing change the term "means" to --- means or device --- or --- means or devices ---, so as to be consistent with the claim changes. As such, applicant hereby retracts the arguments made during applicant's Amendment B going toward applicant's intention to invoke a 35 USC 112 paragraph 6 limitation with respect to limitations of the claims previously including the term "means". Additionally, claim 5 is amended to correct a typographical error inadvertently included therein.

Applicant respectfully submits that the above amendments are fully supported by the original disclosure, including the specification, drawings and claims, and that no new matter is introduced by the above amendments.

The above-identified Office Action has been reviewed, the references carefully considered, and the Examiner's comments carefully weighed. In view thereof, the present Amendment is submitted. It is contended that by the present Amendment, all bases of rejection set forth in the Office Action have been traversed and overcome. Accordingly, reconsideration and withdrawal of the rejection is respectfully requested.

Claim Rejections -- 35 USC §103

The Examiner has rejected Claims 1, 3 and 4 under 35 USC §103(a) as being

unpatentable over Shima (2002/0196423) in view of Nakatsuka (6229625).

It is the Examiner position that: Shima shows a ranging apparatus/method/program with plural

cameras (figure 2A Ref 11 and 12), plural distortion correction means (Paragraph 6 and 7), a corrective

computation means (figure 2A Ref 25), and a ranging computation means which correspond to limitations

of the present claim, but does not show a corrected image selection means or the associated third step of

the claimed invention; Nakatsuka shows a distortion correction means and corrected image selection

means which selects the most appropriately corrected image (column 2 lines 59-65), but does not show

plural cameras, and a ranging computation means; it would have been obvious to modify the invention of

Shima with an image selection means of Nakatsuka because with any image processing like the image

processing that is done in Shima an image processor can make mistakes and an image selection means

would be able to select the proper image for the application as taught in Nakatsuka; and Shima's modified

imaging system makes obvious the claimed invention.

Applicant's Response

The applicant respectfully disagrees with this rejection and submits that claims 1, 3 and 4 are

clearly patentably distinct over the applied references because the proposed modification of Shima's

range finder system to include a select feature of Nakatsuka's apparatus for determining image

processing parameter is improperly based on a suggestion coming entirely from the Examiner

(guided by impermissible hindsight of applicant's disclosure), rather than from any teaching or

suggestion which may be fairly gleaned from the references themselves, and because both references

otherwise fail to disclose or make obvious features of the claimed invention such that any

hypothetical combination based on the actual teachings of the references would not achieve or make

obvious the claimed invention.

Upon review of Nakatsuka, applicant notes that Nakatsuka's disclosed method and apparatus is very distinct from Shima's range finder system and from the present invention in many respects, including the corrected image selection process to which the Examiner has specifically referred. Nakatsuka discloses a technique which enables even an unskilled operator in the field of image processing to give a high-quality image, wherein <u>a single image from a single camera</u> is processed, and wherein the apparatus/method determines an image processing parameter set in an image conversion device which converts image data of an original into image recording data. This structure enables even an unskilled operator in the field of image processing to determine the optimum image processing parameter.

Moreover, the corrected image selection process of Nakatsuka, discussed at his col. 2, lines 59-65, is a process <u>performed by an operator</u>, not one that is automatically performed, and does not otherwise involve multiple corrected images as in the corrected image selection device (formerly means) of the present invention. As explained by Nakatsuka, "This structure enables selection of a desired image out of the images before and after the correction of the image processing parameter and display of the desired image on the display unit, in response to the external operation instruction. The operator can thereby readily <u>compare the image after the correction with the image before the correction</u> and accurately evaluate the image after the correction (emphasis added)." Thus, such comparison is very distinct from the corrected image selection device/method/program of the present invention in which a most appropriate corrected image, from among a plurality of corrected images, is automatically selected, and is also very distinct from the range finding operation performed by Shima using two distantly arranged imaging devices.

12

Given the actual disclosures of the Shima and Nakatsuka references, persons of ordinary skill in the art would not consider the modification proposed by the Examiner, i.e., providing Shima's range finding system with a corrected image selection device based on Nakatsuka's disclosure at his col. 2, lines 59-65, because the references do not provide any motivation for such a modification. Again, Nakatsuka does not use of two different cameras in order to calculate parallax by the principles of triangulation, but only uses a single image from a single camera, and specifically converts image data of an original into image recording data. This is very distinct from the range finder of Shima involving a pair of cameras, parallax and the principal of triangulation, and has no apparent application to Shima's system/method. Given such very distinct systems, including the fact that there is no way to determine distance via parallax in Nakatsuka's system because it does not have two cameras, the references provide no motivation for using the corrected image selection process of Nakatsuka in a range finding apparatus such as that of Shima, and persons of ordinary skill in the art would not consider the proposed modification to be obvious.

Still further, given the fact that Shima fails to corrected image selection means which selects the most appropriately corrected image (as conceded by the Examiner), and the fact that Nakatsuka does not teach the corrected image selection means/method/program as claimed or any equivalent thereof, any hypothetical combination of the two references based on the actual teachings thereof would not achieve or make obvious the invention of claims 1, 3 and 4.

Based on the foregoing, the rejections of the claims 1, 3 and 4 based on the Shima and Nakatsuka references are believed to be overcome in relation to present claims 1, 3 and 4 and it is respectfully requested that the rejections be reconsidered and withdrawn.

Claim 1 is rejected under 35 USC 103(a) as being unpatentable over Shima

(2002/0196423) in view of Foote (7015954).

It is the Examiner's position that: Shima shows a ranging apparatus with plural cameras (figure 2A Ref 11 and 12), plural distortion correction means (paragraph 6 and 7), a corrective computation means (figure 2A Ref 25), and a ranging computation means but does not show a corrected image selection means; Foote shows plural cameras (figure 4A), a plural distortion correction means (column 8 line 45-column 9), and automated corrected image selection means (column 2 line 60-column 3), and teaches the possibility of determining a range of the object that is viewed (column 12 line 65-column 13); it would have been obvious to include the corrected image selection means of Foote because this allows a computer to select an image from a group of possible images allowing the human element of error to be eliminated; and that Shima's system thus modified makes obvious the ranging apparatus of claim 1.

Applicant's Response

Applicant has carefully considered the rejection in light of the specification, and respectfully disagrees for those reasons similar to those above relating to the rejection based on Shima and Nakatsuka, as discussed below.

First, applicant respectfully notes that the automatic video system of Foote is very distinct from the ranging apparatus of the present invention and from the range finding system of Shima in many respects, including the corrected image selection process to which the Examiner has referred. Foote's array of multiple fixed cameras captures plural component images which are combined into a single image. In the disclosure of Foote, each of the different cameras takes a picture of a different portion of a specific scene. The cameras are positioned such that a

14

portion of the picture from Camera 1 will overlap on its edges with those images captured from

Cameras 2, 3, and 4, etc. Since the angle of the camera looking at the object is different for each

of the cameras, the details of the image that overlap in each of the pictures taken from each of

the cameras will be slightly different. Thus, the invention of Foote uses warping equations to

warp the image taken from each camera such that the images may be blended and the combined

image is seamless with respect to each of the component images.

This is very different from the present invention wherein the entire image is corrected to

eliminate distortion caused by the optical systems for the cameras, and is also very different from

Shima's range finding system involving a pair of cameras, parallax and the principal of

triangulation to find distances to objects in images taken by image capturing devices. Thus, such

comparison is very distinct from the corrected image selection means/method/program of the

present invention in which a most appropriate corrected image, from among a plurality of

corrected images, is automatically selected. Clearly, Foote's corrected image selection process

is not equivalent to the claimed features. Hence, even if the references were hypothetically

combined, any combination resulting from the actual disclosures of the references would not

include or make obvious a ranging apparatus including the several means defined in the present

independent claims.

Further, any motivation for combining select features of the two references (as proposed

in the rejection) is based entirely on impermissible hindsight coming from the Examiner, as

opposed to any teaching, suggestion or motivation coming from the references. Again, Foote

uses a plurality of cameras set up to each take a picture of a different portion of an entire scene

and then those images are combined to create an image of the entire scene. This is very distinct

from the range finder of Shima involving a pair of cameras, parallax and the principal of

triangulation. Given such very distinct systems, the references provide no motivation for using the corrected image selection process of Foote in a range finding apparatus such as that of Shima, and persons of ordinary skill in the art would not consider the proposed modification to be obvious.

Based on the foregoing, the rejection of the claim 1 based on the Shima and Foote references is believed to be overcome and it is respectfully requested that the rejection be reconsidered and withdrawn.

Claims 7-12 are rejected under 35 USC 103(a) as being unpatentable over Shima (2002/0196423) in view of Nakatsuka (6229625 as applied to claims 1, 3 and 4 above , and further in view of Komiya (6211911).

It is the Examiner's position that: Shima shows a ranging apparatus with plural cameras, plural distortion correction means, a corrective computation means, and a ranging computation means but does not show a corrected image selection means; Nakatsuka shows a distortion correction means and corrected image selection means with selects the most appropriately corrected image, but does not show plural cameras, and a ranging computation means; Komiya shows plural cameras, plural distortion correction means, wherein the plural distortion means includes a distortion correction table prepared in advance for the cameras respectively shown because of the multiple image correction sections for each camera; it would have been obvious to modify Shima with Nakatsuka because with any image processing like the image processing that is done in Shima an image processor can make mistakes and an image selection means would be able to select the proper image for the application as taught in Nakatsuka; it would also have been obvious to include the distortion correction table taught by Komiya because this is a

common means to correct for distortion and adds no new or unexpected results; and the resulting

system makes obvious the claimed invention.

Applicant's Response

Applicant has carefully considered the Examiner's rejections, and respectfully disagrees

with such rejections for those same reasons discussed above in relation to the deficiencies of

Shima and Nakatsuka with respect to claims 1, 3 and 4, which are not overcome by the

additional teachings of Komiya.

Based on the foregoing, the rejections of the claim 7-12 based on the Shima, Nakatsuka

and Komiya reference is believed to be overcome and it is respectfully requested that the

rejection be reconsidered and withdrawn.

CONCLUSION

For all of the above mentioned reasons, applicant requests reconsideration and

withdrawal of the objections and rejections of record, and allowance of all pending claims.

Applicant again respectfully submits that the above amendments are fully supported by

the original disclosure, including the specification, drawings and claims, and that no new matter

is introduced by the above amendments.

The application is now believed to be in condition for allowance, and a notice to this

effect is earnestly solicited.

If the Examiner is not fully convinced of the allowability all of the claims now in the

application, applicant respectfully requests that the Examiner telephonically contact applicant's

undersigned representative to expeditiously resolve prosecution of the application.

Favorable reconsideration is respectfully requested.

Respectfully submitted,

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